Story by Danielle Supercinski

Saving public resources

Tips for conserving energy and water in homes and landscapes

Through the Rio Grande Basin Initiative, Texas AgriLife Extension Service county agents and Extension specialists conducted water and energy conservation workshops for homeowners.

Three "Flip the Switch, Stop the Drip—Conserving Energy and Water" workshops were conducted in March, April, and June in Fort Stockton, Uvalde, and McAllen. In-home water conservation kits given to all 150 participants included a water-conserving shower head, a spray nozzle, an energy-saving compact fluorescent light (CFL) bulb, and a faucet aerator, along with fact sheets, booklets, and additional water-saving information.

"Water is inexpensive and is being misused," said Janie Harris, AgriLife Extension specialist in family and consumer sciences, at the Uvalde workshop. "Around Uvalde most water use is for agriculture; 75 miles down the road in San Antonio, they have a growing need for water in homes as the population continues to grow."

Because promoting water-conserving consciousness is of the utmost importance, Extension specialists and county agents are educating homeowners about little ways to reduce water use, such as turning off the water while brushing teeth or shaving. Having a household water management plan also is a good idea, Harris said. This plan is a good way to know how water is used, how much water is used, and how much that water costs. In addition, homeowners should make sure their toilets, faucets, and shower heads fit the current plumbing standards, and replace older faucets and fixtures with water-saving devices.

Prior to 1980, toilets used about 5-7 gallons of water per flush; from 1980 to 1992 that amount was 3.5 gallons per flush.

"New plumbing standards were passed by Congress in 1992; showerheads and faucets were changed to allow only 2.5 gallons per minute and toilets were reduced to 1.6 gallons per flush," Harris said. "By replacing old equipment with new devices, technologies, and appliances, and by fixing leaks, families can reduce water use by 25 percent to 35 percent."

To determine if a toilet fits the 1992 standard of 1.6 gallons per flush, look underneath the tank's lid for the year it was manufactured, she said. Anything made before 1992 should be replaced.

Other in-home energy and water conservation options offered by Harris include:

- Using an Energy Star™ washing machine that uses 18-25 gallons per wash instead of the 32-59 gallons that older washers use.
- Using an Energy Star™ dishwasher that uses an average of 44 percent less water than conventional models. Dishwashers also use less water than hand washing.
- Using energy-efficient water heaters such as the tankless Rennai or Mutland® Hot Water D'MAND® System. An average home wastes about 10,000 gallons of water per year by running it down the drain while waiting for hot water. The tankless water heating systems use less

energy, but not necessarily less water. The shorter the distance between the water heating system and the hot water faucet, the smaller amount of water that runs out while waiting for the hot water to arrive.

"By 2035, Texas will have only about 85 percent of the water required to meet the needs of the population," said Barbara Storz, Hildalgo County AgriLife Extension agent–horticulture, who also spoke at the workshops.

In addition to in-home water conservation, water-wise landscaping is vital because 65 percent of water is used for irrigation, Storz said. "Approximately 782 billion gallons of water are used for lawn and landscape irrigation, and half of that is wasted."

Several options will reduce the amount of water needed in landscapes. Xeriscape is one example. Storz said Xeriscape is not "zeroscape," but a beautiful, water-efficient landscape. Homeowners also can group plants by water use and minimize high water use areas. Runoff can be captured through rainwater harvesting or rain gardens.

"It is important to know turfgrass species that are more drought-tolerant and know when the turf does and does not need to be irrigated," Storz said. "If you walk across your grass and see your footprints, the turf is stressed and needs to be watered. When irrigation is needed, it should be watered longer and less often, more than 15 minutes." This longer period of watering allows the water to saturate more deeply into the soil.

Many homeowners are conserving water by catching rainwater. At the workshops, Billy Kniffen, AgriLife Extension program specialist, said rainwater harvesting can be as small as collecting rain in a small rain barrel or as large as collecting tens of thousands of gallons in multiple tanks. The possibilities and sizes are endless.

"Rainwater harvesting creates 'run in' instead of 'run off,' so rain goes to the plants instead of around them," Kniffen said. "I bought land with no water on it. My whole house is serviced by rainwater—no city water, no well water, all rainwater."

Kniffen uses rainwater in his toilets and laundry, and to wash vehicles. He can store 20,000 gallons in his six catchment tanks. He also has a filtration system for using the rainwater as drinking water in his home.

For every 1 inch of rainfall, about 6 gallons of water are collected per square foot of roof area, he said. The main components needed to set up a rainwater harvesting system are: 1) roof and collection surfaces, 2) gutters and downspouts, 3) first flush (wash off roof, which is optional for outside use), screens and filters, 4) gate valve and faucets, 5) overflow pipe, 6) pump and pressure tank (also optional with drip irrigation), and 7) distribution to plants, wildlife, birds, livestock, or in-home uses.

Incentives such as no sales tax on supplies encourage rainwater harvesting. In January 2007, the Texas Commission on Environmental Quality produced new guidelines for using rainwater in the home.

"Rainwater harvesting is certainly one of the tools we can all employ to help us meet future demands for water as the junction between supply and demand grows closer and the need to conserve our water supply while reducing stormwater runoff becomes more critical in Texas," Kniffen said.

"Our desired outcome is that homeowners will adopt water conserving attitudes, change behaviors, install water-conserving equipment and appliances, reduce water use in the landscape, and capture and reuse water," Harris said. "We want families to learn how to use water wisely and efficiently."

For more information about water conservation and rainwater harvesting, visit *http://fcs.tamu.edu/housing/efficient_housing/water_management/index.php* and *http://rainwaterharvesting.tamu.edu/*. ⇨

Tips on reducing energy in the home

Hazel Flores, customer service representative for American Electric Power Texas, presented energy saving tips at the Uvalde workshop. Below are a few tips to help reduce your energy use:

Air conditioning

- During the winter keep the thermostat on 68° at night and 60° during the day. During the summer keep it on 72° at night and 82° during the day.
- Change air filters once a month or rinse if washable. Insert air filter correctly.
- For window units, look at the size of the room and number of people in the household; buy a unit that will accommodate the residents' needs.
- Don't close off air vents.

Windows and thresholds

- Use rubber or metal plates along with weather stripping.
- Caulk around windows and doors.

In and around the kitchen

- **Dishwasher** – Run bleach through the dishwasher to clean the drain.
- **Baking** – Use ceramic or glass pans because they bake food quicker than metal pans.
- **During summer** – Cook with the microwave, slow cooker, or toaster oven because they use less energy than the range. Also, turn off the range 10 minutes before the food is done and it will continue to cook.
- **Refrigerator** – If coolness can be felt around the refrigerator, replace the gasket or apply petroleum jelly to it, expanding it and making the suction tighter.
- **Lights** – Use CFL bulbs in all light fixtures; they have a longer lifespan, use less energy, and create less heat.

For more energy-saving tips, visit *http://www.AEPefficiency.com* or the Texas AgriLife Extension Service, Family and Consumer Sciences Web site at *http://fcs.tamu.edu/housing/efficient_housing/energy_management/index.php*.